

- (b) the testimony is based on sufficient facts or data;
- (c) the testimony is the product of reliable principles and methods; and
- (d) the expert has reliably applied the principles and methods to the facts of the case.

Fed. R. Civ. P. 702.

B. Summary of Dr. Kroll's opinions and the scholarship on which they are based

Dr. Kroll's calculations and conclusions regarding Mr. Timpa appear on pages 13-16 of his expert report. He calculated the amount of weight the officers were applying to Mr. Timpa throughout the encounter. Pl. Ex. C at 15-16. He then compared the weight force applied to Mr. Timpa to the 225-pound known safe limit established in the Michalewicz study in which subjects were hog-tied in a prone position and compressed with up to 225 pounds on their backs, and found that the total weight force applied to Mr. Timpa never even approached the demonstrated safe weight of 225 pounds. *Id.* The endnotes appearing in that discussion show that Dr. Kroll relied on the following scholarship:

104. Gill JR, Landi K. Traumatic asphyxial deaths due to an uncontrolled crowd. *Am J Forensic Med Pathol.* 2004;25(4):358-361.

114. Michalewicz BA, Chan TC, Vilke GM, Levy SS, Neuman TS, Kolkhorst FW. Ventilatory and metabolic demands during aggressive physical restraint in healthy adults. *J Forensic Sci.* 2007;52(1):171-175.

139. Kroll MW, Brave MA, Kleist SR, Ritter MB, Ross DL, Karch SB. Applied Force During Prone Restraint: Is Officer Weight a Factor? *Am J Forensic Med Pathol.* 2019;40(1):1-7.

140. DeAngelis D, Schurr M, Birnbaum M, Harms B. Traumatic asphyxia following stadium crowd surge: stadium factors affecting outcome. *WMJ.* 1998;97(9):42-45.

141. Hopkins I, Pountney S, Hayes P, Sheppard M. Crowd Pressure Monitoring. In: Dickie RSaJ, ed. *Engineering for Crowd Safety*. Elsevier; 1993.

Id. at 15-16, 20-25. None of these calculations or conclusions are mentioned even a single time in Plaintiffs' 27-page Motion.

C. Plaintiffs' motion misrepresents Dr. Kroll's expert report and deposition testimony.

Instead, Plaintiffs focus exclusively on the introductory portion of Dr. Kroll's report in which he briefly describes different types of asphyxia and repeatedly notes that they *mostly are not applicable* to the circumstances of Mr. Timpa's death. *Id.* at 6-9. The stated thesis of Plaintiffs' motion is as follows:

Dr. Kroll relies on two unscientific notions for his opinion that restraint did not kill Tony Timpa. The first is two examples of "judicial pressing," the practice of placing weights on subjects, who unlike Timpa, were on their back. The second is a biomechanical model based on *crush asphyxia* not *compression* (or *positional/mechanical*) *asphyxia* and which employs a definition of "flail chest" that is not accepted by the medical community.

Motion at 4 (emphasis in original). Their motion should be denied because Dr. Kroll did not offer or base any opinions in this case on flail chest or judicial pressing. The terms "flail chest" and "judicial pressing" occur in just one single paragraph that appears in the introductory portion of Dr. Kroll's report:

A biomechanical ribcage model predicts that an adult male requires at least 572 ± 57 lbs of static chest mass to cause flail chest, a potentially lethal condition and a true compression fatality. Historical records exist of judicial "pressing" or the application of chest mass for interrogation or execution.¹¹⁶ These records of judicial pressing show that about 600 lb is required to kill.

Pl. Ex. C at 7. In that introductory portion, Dr. Kroll briefly described different types of asphyxia and repeatedly notes that they *mostly are not applicable* to the circumstances of Mr. Timpa's death. *Id.* at 6-9. Nothing in Dr. Kroll's expert report remotely suggests that he relied on the information in the aforementioned paragraph in reaching his conclusions about Mr. Timpa's death.

1. Flail Chest

Plaintiffs cite page 28 of Dr. Kroll's deposition transcript as the basis for their incorrect claim that Dr. Kroll opined "that unless there is adequate compression to cause 'ribcage failure' and 'flail chest' there can be no compression asphyxia." Motion at 6. That is a misrepresentation of the cited testimony, in which Dr. Kroll is asked about how air is drawn into the lungs, and notes in part that "you have to have a rigid or expanded rib cage. Otherwise the rib cage will collapse. And that's the case with flail chest, which happens with mechanical asphyxia." App. at 11 (Kroll Dep. at 28:6-19).

Plaintiffs cite pages 45 and 56-60 of Dr. Kroll's deposition transcript for their incorrect claim that "[f]or his calculations, Dr. Kroll states he relied on two sources: biomechanical strength of the rib cage and records about judicial pressing" (emphasis in original). Motion at 8. In the portions of the deposition cited by Plaintiffs, Dr. Kroll was not answering questions about his opinions in this case. The snippets of testimony highlighted by Plaintiffs are part of a lengthy exchange¹ about a specific peer-reviewed article Dr. Kroll co-authored: Mark W. Kroll, et al., *Acute forces required for fatal compression asphyxia: a biomechanical model and historical comparisons*, MEDICINE, SCIENCE AND THE LAW, 1-8 (2017) (App. at 2-9). The thesis of that article is clearly stated: "The objective of our study is to define the force required to compress the chest sufficiently to cause fractures sufficient to result in flail chest." App. at 3. Kroll repeatedly stated that Mr. Timpa did not experience flail chest, and notes that asphyxia can occur in the absence of broken ribs or flail chest. App. at 22-23 (Kroll Dep. at 51:1-52:24).

¹ Plaintiffs' counsel introduced the topic as follows: "I'm not going to hold you to every preposition of each of these. I just want to get an idea of your -- of the pieces that you recall and what the gist of it was. 2017, Acute Forces something or another that you wrote for Science, Medicine, and the Law, what was your thesis there?" App. at 12 (Kroll Dep. at 41:18-24). The discussion of that article spans pages 41- 68 of Dr. Kroll's deposition. App. at 12-39.

Plaintiffs repeat this manufactured opinion on pages 16-17 of their Motion, where they make the following uncited assertion: “The centerpiece of Dr. Kroll’s position is mathematical modeling for ribcage failure. He asserts ribcage failure is essential for flail chest and compression asphyxia in arrest-related deaths.” No citation is provided because no citation exists: Dr. Kroll did not write or say that. Plaintiffs then repeat their incorrect claim that the calculations underlying Dr. Kroll’s opinions about Mr. Timpa are based on Dr. Lanny Griffin’s finding that 575 pounds is the weight necessary to cause flail chest, and again give pages 44-50 of Dr. Kroll’s deposition as the citation for that claim. Motion at 16. As previously noted, pages 41-68 of Dr. Kroll’s deposition discuss his 2017 article, not his opinions about Mr. Timpa. Dr. Griffin is one of the co-authors of the 2017 article (App. at 2), and the number 575 does not appear anywhere in Dr. Kroll’s calculations of the weight force applied to Mr. Timpa. Pl. Ex. C at 15-16. In fact, the 2017 article is not cited anywhere in Dr. Kroll’s report, and appears only in the attached list of 141 reference articles. *Id.* at 20-25.

Similarly, Plaintiffs’ remaining arguments about Dr. Kroll’s purported flail chest “model” are criticisms of opinions he never offered. *See* Motion at 6-11, 16-17, 24-26. As a result, no further response is necessary or even possible.

2. Judicial Pressing

Plaintiffs’ assertion that “Kroll relies on ‘judicial pressing’ to conclude there was no compression asphyxia” is an outright fabrication. Motion at 11. They do not offer any citation to Dr. Kroll’s report or deposition, or otherwise explain where they got this bizarre notion. Dr. Kroll’s report made a passing reference to judicial pressing as an interesting tidbit of history. Because the premise of Plaintiffs’ judicial pressing argument is invalid, there is no need to respond to the **9+ pages** Plaintiffs devoted to it. Motion at 11-16, 20-24.

Plaintiffs' motion should be denied because their thesis is obviously false. Dr. Kroll did not rely on the biomechanical strength of the rib cage or records about judicial pressing in reaching his opinions in this case, and he never said that he did.

D. Plaintiffs misrepresent Dr. Kroll's credentials and expertise.

On page 5 of their Motion, Plaintiffs claim Dr. Kroll's "expertise comes from his work on TASER where he serves on its board," and cite Exhibit A as their source for that claim. Exhibit A is Dr. Kroll's 94-page curriculum vitae, and it does not support Plaintiffs' claim that Dr. Kroll's "expertise comes from his work on TASER." Instead, it shows that Dr. Kroll earned his bachelor's degree in mathematics as well as his master's degree and Ph.D. in electrical engineering from the University of Minnesota. Pl. Ex. A at 2. From 1978-2005 Dr. Kroll led the research and development divisions at several medical device manufacturing companies, where he developed medical devices that diagnose and treat disease. *Id.* at 3-4; Pl. Ex. C at 4. Now retired from the corporate world, Dr. Kroll has been an adjunct full professor of biomedical engineering at both the University of Minnesota and California Polytechnic State University for 17 and 20 years respectively. *Id.*; Pl. Ex A at 3. Dr. Kroll's research turned to arrest-related death, first focusing on handheld electrical weapons and then expanding to topics including prone restraint and excited delirium. Pl. Ex. C at 4-5. Dr. Kroll holds hundreds of U.S. and international patents related to medical devices, and is a Fellow of the American Institute for Medical and Biological Engineering, the American College of Cardiology, the Heart Rhythm Society, and the IEEE Engineering in Medicine and Biology Society. Pl. Ex. A at 5, 6-32. Plaintiffs' claim that Dr. Kroll's "expertise comes from his work on TASER" mischaracterizes his education, work experience, scholarship, and expertise.

Plaintiffs mount no real challenge to Dr. Kroll's qualifications, but instead take baseless shots at imagined motivations for his research. Plaintiffs claim (yet again without citation) that "[l]ike most of his work, Dr Kroll's work is the product of litigation...[h]is particular flail chest [sic], he states explicitly, is simply to defend litigation claims against the police. He candidly states he has no other purpose but to deflect liability claims." Motion at 21-22. These claims fail for each of three reasons: (1) peer-reviewed scholarly articles and books are not "products of litigation;" (2) Dr. Kroll did not say anything of this nature; and (3) even if he had, an expert's motivations for engaging in particular areas of study are a matter of weight rather than admissibility.

E. Plaintiffs' Motion includes many other mischaracterizations and fabrications.

Plaintiffs' Motion makes many other assertions that are either mischaracterizations of Dr. Kroll's statements or outright fabrications. For example, Plaintiffs' allegation that Dr. Kroll did not consider or rely upon the autopsy report or the body camera video footage is plainly false; he used the body camera footage to create a detailed timeline laying out the amount of weight force the officers were applying at any given time, and both are listed as "materials reviewed or considered." Pl. Ex. C at 14, 17.

In another example, Plaintiffs also asserted (again without citation) that

[f]rom these Coke machine incidents, Dr. Kroll attempted to ascertain what force between 225 pounds and 1,000 pounds would break the sternum and cause ribcage failure. Dr. Kroll employed the 225-pound floor based on the studies conducted Drs. Theodore Chan and others, which was funded by the County of San Diego during the litigation of *Price v. County of San* (sic).

Motion at 8. None of Dr. Kroll's calculations in this case attempted to determine what amount of force would cause ribcage failure, nor did they rely on "these Coke machine incidents" or any studies by Dr. Theodore Chan. *See* Pl. Ex. C. at 13-16.

Plaintiffs’ oft-repeated claim that Dr. Kroll “publicly disavowed his research” is ludicrous on its face. Motion at 17, 22, 26. As the Motion itself admits, at the height of the international uproar surrounding the murder of George Floyd, Dr. Kroll declined a reporter’s repeated interview requests and tried to deter future pestering with a self-deprecating remark. *Id.* at 17. This is a very far cry from “publicly disavowing his research.” Plaintiffs’ numerous misrepresentations of Dr. Kroll’s findings perfectly illustrate why he should have been concerned about biased and inaccurate misrepresentation of his scholarship.

II. CONCLUSION

Plaintiffs’ Motion is a 27-page collection of unfounded assertions about methodologies Dr. Kroll did not use, opinions he did not offer, and statements he did not make. Accordingly, it should be denied.

WHEREFORE, Defendants Dustin Dillard, Danny Vasquez, Raymond Dominguez, and Kevin Mansell respectfully request that the Court deny this motion and grant any further relief it deems necessary and just.

Respectfully submitted,

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CERTIFICATE OF SERVICE

I certify that on February 10, 2023, I electronically filed the foregoing document with the clerk of court for the U.S. District Court, Northern District of Texas, using the electronic case filing system of the court. The electronic case filing system sent a “Notice of Electronic Filing” to the following attorneys of record who have consented in writing to accept this Notice as service of this document by electronic means.

/s/ Lindsay Wilson Gowin
Senior Assistant City Attorney